CHAPTER 5

CONVOY CONTROL, ORGANIZATION, AND PLANNING

Convoys are planned to organize and control motor movements. They are used for the tactical movement of combat forces; the nontactical movement of logistical units; and the movement of personnel, supplies, and equipment. This chapter contains information on all aspects of convoy operations.

5-1. PLANNING FACTORS. Regardless of the mission, the process of planning and organizing convoys is the same. Mission, enemy, troops, terrain, and time available drive the specific planning factors and influence how the convoy will be controlled. Other factors include:

- The state of training of drivers.
- Types of loads.
- Number of vehicles involved.
- Traffic conditions.
- Quality of road networks.
- Time.

When operating with allied forces, also consider such factors as foreign equipment, cultural differences, and diverse ethnic backgrounds.

5-2. CONVOY CONTROL. Control of motor movements is exercised in two ways. The first type of control is exercised by the unit making the motor movement; this is organizational control. The second is by the commander of the area through which the convoy moves; this is area control.

"Marches are war...aptitude for war is aptitude for movement." Napoleon

a. **Organizational Control**. Organizational control is exercised by the moving unit before, during, and after movement. Effective organizational control requires march discipline. March discipline is a command responsibility that comes from effective organizational control and training. It is essential to the effectiveness of the march column to prevent conflict with other movements in the area. It can only be attained by thorough training, supervision of operations by technically competent leaders, and attention to detail. March discipline demands--

- Using qualified drivers who operate their equipment safely under a variety of driving conditions.
- Adhering to unit SOPs that specify tactics and techniques for movement, immediate action drills, and communications techniques.
- Strictly following traffic regulations.
- Meeting SP, en route CP, and RP times without failure.
- Following the prescribed route at the prescribed march rate.
- Halting at rest stops for the required amount of time.

- Effectively using protective measures, including maintaining the prescribed vehicle interval, radio discipline, and blackout driving during night convoys.
- Maintaining proper care of equipment.
- Observing safety policies and regulations at all times.
- Ensuring that drivers obey the rules of the road, traffic laws or regulations, speed limits, and time and distance gaps.

b. **Area Control**. This kind of control is exercised by the commander who controls the area/terrain through which convoys move. Area control is normally exercised through movement control channels and is known as highway regulation. Highway regulation is planned by the DTO for the division rear area, the transportation battalion (MC) for the corps rear area, and the TMCA for the COMMZ. It is supervised by movement regulating teams assigned to the MC battalion and TMCA and by MPs for traffic control.

Division, corps, and theater army traffic circulation plans and highway regulation plans specify the control measures applied to MSRs. Convoy commanders are responsible for ensuring that they follow policies in areas through which they will pass.

Controlling traffic in an area of operations is difficult even under the best of conditions. There will always be competing demands for the available road network. Units cannot expect to be able to use all routes without requesting permission. Highway regulation planners establish control measures to ensure order and prevent congestion.

One method used to establish control is classifying MSRs and ASRs. These classifications are based mainly on the ability of a route to support the expected traffic volume and types of vehicles that will use the route. The classifications specify the degree of control required and whether moving units must submit a movement bid (clearance request) to use a route. The classifications will be specified in the highway regulation plan. There are five route classifications:

- *Open route*. The route is open to all types of traffic and the moving unit does not need to submit a movement bid to use the route.
- *Supervised route*. The route is open to most types of traffic. However, convoys of certain size, vehicles of certain characteristics, and certain slow-moving vehicles may require a movement credit to use the route. The highway regulation plan will specify the size of convoys or types of vehicles that require a movement credit.
- *Dispatch route*. Full control is exercised over a dispatch route. Priorities are set for use of this type route. A movement credit is required for the movement of any vehicle or group of vehicles.
- *Reserved route*. This type route is set aside for the sole use of a certain unit, specified operation, or type of traffic. If a route is reserved for a unit, then the commander of that unit decides how much and what kind of control is required.
- *Prohibited route*. No traffic is allowed over a prohibited route.

5-3. CONVOY ORGANIZATION. A convoy is a column of vehicles that moves from the same origin to destination and is organized for the purpose of control under a single commander. The minimum number of vehicles in a convoy is directed by theater policy, standardization agreement, or the HN. In the absence of policies to the contrary, convoys are considered six or more vehicles. All vehicles normally move at the same march rate.

a. **Convoy Elements**. Vehicles in a convoy are organized into groups to facilitate command and control. A convoy may be as small as a 6-vehicle march unit or as large as a 300-vehicle column. Whenever possible, convoys are set up along organizational lines, such as squad, platoon, company, battalion, and brigade. Convoy elements include march units, serials, and columns (Figure 5-1).

(1) ***March units***. A march unit is the smallest element of a convoy. As the smallest subdivision of a column, march units may have up to 25 vehicles assigned. A march unit usually represents a squad- to platoon-size element. Each march unit has a march unit commander.

(2) ***Serials***. A serial is a group of two to five march units. It represents approximately a company- to battalion-size element. Each serial has a serial commander.

(3) ***Columns***. A column is a group of two to five serials. It represents approximately a battalion- to brigade-size element. Each column has a column commander.

For example, a medium truck company commander can organize his convoy as a serial by dividing the 60 task vehicles by platoons into three march units of 20 vehicles each. The company commander would then serve as the convoy commander and the platoon leaders would serve as march unit commanders. Remaining vehicles would be added to each march unit for command and control and convoy support.

Convoy commanders should not generally subdivide march units of 20 or fewer vehicles into smaller march units because of road space considerations. This will reduce the amount of road space taken up by the gaps between small march units. If the convoy commander determines that security requirements warrant greater separation between convoy elements, he could divide the 60 task vehicles by platoons into three serials of 20 vehicles each and further subdivide each serial by squads into two march units of 10 vehicles each. In this example, the platoon leaders would serve as serial commanders and the squad leaders as march unit commanders.

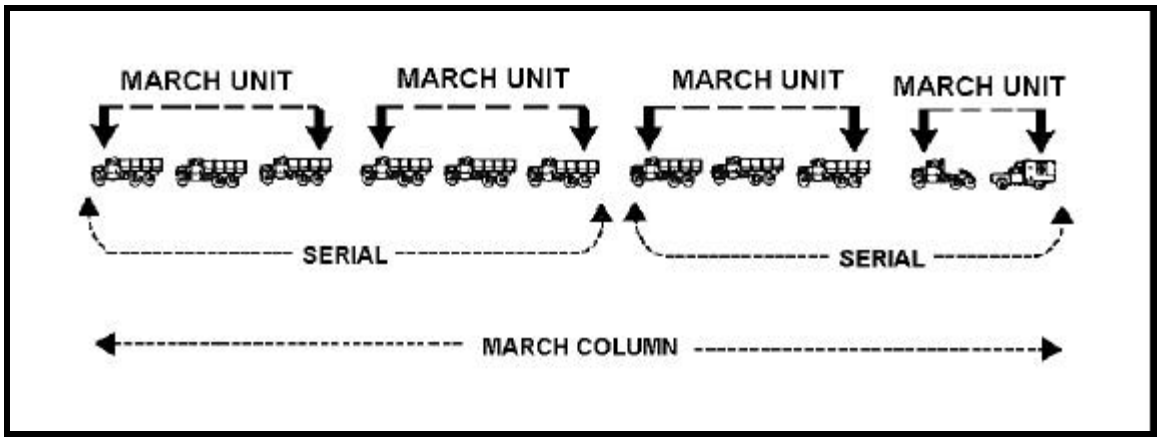

Figure 5-1. Convoy organizational elements

b. **Convoy Sections**. Leaders must know how to position vehicles within the elements. All columns, serials, and march units, regardless of size, have three parts: a head, a main body, and a trail (Figure 5-2). Each of these parts has a specific function.

(1) ***Head***. The head is the first vehicle of each column, serial, and march unit. Each head should have its own pacesetter. The pacesetter rides in this vehicle and sets the pace needed to meet the scheduled itinerary along the route. The officer or noncommissioned officer at the head ensures that the column follows the proper route. He may also be required to report arrival at certain checkpoints along the route. With the head performing these duties, the convoy commander has the flexibility to move up and down the column to enforce march discipline.

(2) ***Main body***. The main body follows immediately after the head and consists of the majority of vehicles moving as part of the convoy. This is the part of the convoy that may be subdivided into serials and march units for ease of control.

(3) ***Trail***. The trail is the last sector of each march column, serial, and march unit. The trail officer/NCO is responsible for recovery, maintenance, and medical support. The recovery vehicle, maintenance vehicles, and medical support vehicles/teams are located in the trail. The trail officer/NCO assists the convoy commander in maintaining march discipline. He may also be required to report clear time at checkpoints along the route. In convoys consisting of multiple march units and serials, the convoy commander may direct minimum support in the trail of each serial or march unit and a larger trail party at the rear of the column. As the trail party may be left behind to conduct repairs or recovery, the convoy commander should provide trail security and communications.

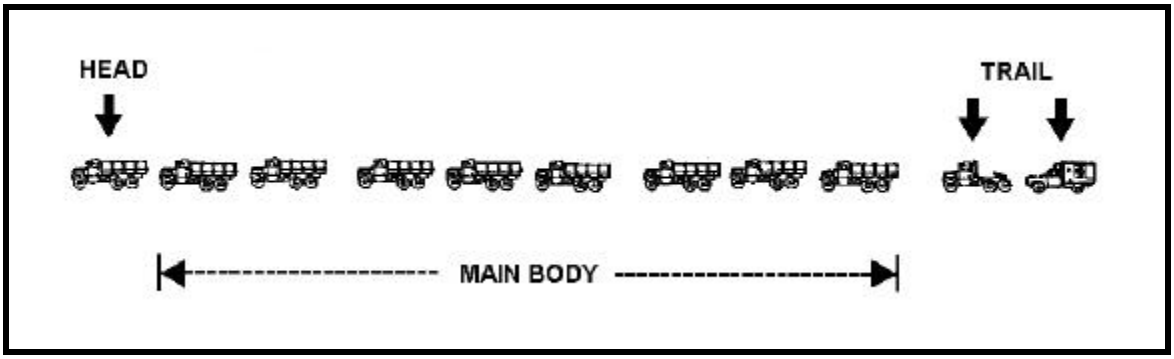

Figure 5-2. Functional elements of a convoy

c. **Vehicle Placement**. Certain factors influence the placement of vehicles in a convoy. The commander should consider the following guidance in placing vehicles within each convoy element:

- Give special attention to vehicles loaded with ammunition and bulk petroleum. Try to separate these vehicles or disperse them throughout the march elements. A larger gap between

vehicles carrying ammunition or bulk petroleum can also be prescribed. Tactically segregate critical supplies to ensure that no one element or capability is lost due to enemy action.

- Position heavier or slower vehicles at the head to assist in maintaining the prescribed convoy speed.
- Place C2 vehicles where they can maintain control of the convoy. Also consider protecting C2 vehicles from enemy action. They are priority enemy targets. Commanders may use an irregular pattern of placing C2 vehicles, or they may use trucks instead of HMMWVs or CUCVs.
- Place maintenance and recovery vehicles at the end of each march unit and at the end of the convoy to recover or make quick repairs to disabled vehicles down along the side of the road.
- When it will not compromise the security of the convoy, locate trucks requiring the longest unloading time at the head of the march element to achieve the fastest turnaround time.

d. **Types of Column Formations**. The column must be organized to meet mission requirements and ensure organizational control. The convoy commander decides how the column will be organized for control, choosing from three basic methods: close column, open column, and infiltration. The difference between the three methods is one of spacing vehicles, or gap. The convoy commander must weigh factors such as the threat, type of route, and ability to communicate in deciding the proper gap for the movement. The gap is determined by the length and speed of the vehicles. The rule of thumb for vehicle gap is to allow a 4-second gap for trucks. If the convoy includes vehicles with trailers, allow an 8-second gap. Normally, the gap will be 25 to 50 meters in urban areas (close column) and 100 meters in rural areas or highways (open column). Table 5-1 (page 5-6) and Table 5-2 (page 5-7) show types of column formations and the gap between vehicles. The number of vehicles (density) per kilometer of road and the rate of march may be changed based on METT-T. For detailed instructions for figuring vehicle gap, see AR 55-29 or FM 21-305.

Drivers are responsible for maintaining the gap between vehicles along the route. Leader and driver training is essential. Helicopters or other aircraft, if available, can assist the convoy commander in maintaining the proper gap. When the pilot informs the convoy commander of how well or poorly drivers are maintaining the gap, the convoy commander can make the necessary adjustments.

5-4. CONVOY PLANNING. When a unit receives a mission or movement order, the unit officers and operations section personnel begin making plans. Most convoy planning should be based on the unit SOP. It should specify the most common planning activities. However, certain requirements must be coordinated outside the moving unit and these require support from the battalion and higher staffs. See Appendix M for information on coordinating active and reserve component convoys in CONUS. See Appendix N for distribution formulas and percentages needed to estimate the axle weight distribution for a loaded vehicle.

The convoy commander must perform specific actions to prepare the convoy. A limited amount of time is available to accomplish the following:

- Select and reconnoiter the route.
- Submit a movement bid if required.
- Effect coordination for en route security.
- Give instructions to subordinate element commanders and other supervisory personnel.
- Inspect personnel and vehicles.
- Brief convoy personnel.

Table 5-1. Types of column formations

TYPE OF FORMATION	WHEN USED	GAP BETWEEN VEHICLES	RATE	ADVANTAGES	DISADVANTAGES
Close	Night, poorly marked routes, congested areas, reduced visibility.	25 to 50 M	15 MPH/ 25 KMPH	Full traffic capacity of road can be used. Control is easier. Fewer guides, escorts, and route markers are needed.	Quick dispersion is difficult. The column is easily detected. May cause congestion at point of arrival. Requires careful scheduling and rigid control to avoid blocking at intersections. Causes driver fatigue.
Open	Daylight, well-marked routes, highways.	100 M	25 MPH/ 40 KMPH	Less chance of enemy observation or damage from attack. Cargo moves faster. Driver' s fatigue is reduced. Fewer accidents; very flexible.	Command and control are difficult. Proper vehicle spacing is hard to keep.
Infiltration	Daylight, congested areas, heavy traffic crosses route.		Various	Provides maximum security and deception. High speeds are possible. Other traffic has little effect on individual trucks.	More time required to complete the move. Column control is nearly impossible. Drivers can get lost. Specific details must be given to each driver. Maintenance, refueling, and messing are hard to arrange. Vehicles may bunch up, causing close columns to form. Requires experienced drivers. Orders are not easily changed. The unit cannot be redeployed as a unit until the last vehicle arrives at destination.

Table 5-2. Night column formations

TYPE	GAP BETWEEN VEHICLES	RATE	ADVANTAGES	DISADVANTAGES
Blackout drive	15 to 20 M	5 to 10 MPH/ 8 to 16 KMPH	Limits enemy observation. Darkness provides security.	More vehicles in ambush kill zone. Driver fatigue. Increased time distance.
Lights on drive	50 to 100 M	20 to 30 MPH/ 33 to 50 KMPH	Drivers stay alert. Enemy reaction time reduced. Speed provides security. Less vulnerable to ambush and sniper fire.	Control is harder. Enemy observes the move. May be very vulnerable to enemy air strikes.

Besides convoy control and organization, convoy commanders must consider the following elements during the planning process:

- Advance/quartering party.
- Convoy control personnel.
- Start points and release points.
- Halts.
- Gaps and march rate.
- Submission of movement bids.
- Communications.
- Route reconnaissance.
- Escort and security elements.
- Convoy support.

a. **Advance/Quartering Party**. Advance and quartering parties coordinate convoy arrival at destination. For support missions, the advance party coordinates with the receiving unit for staging vehicles for on-load or off-load, MHE, and security. When a unit relocates, the quartering party prepares for the arrival of the main body of the convoy. The advance party may travel with the column during the early stages of the move; however, it must arrive at destination sufficiently ahead of the column to perform its mission.

From a convoy control perspective, the major functions of the advance party or quartering party are to ensure that the column is able to move quickly off the route and into the marshaling or assembly area. It also positions individual vehicles within the marshaling or assembly area. These actions will prevent congestion on the route and enhance security by not allowing vehicles to be lined up along a route waiting to enter the marshaling or assembly area. The advance party must have

enough personnel to accomplish this task. The advance party will also have to secure and sweep the area for contamination or enemy activity if the area is not secured.

b. **Convoy Control Personnel**. Control is exercised by the column commander, serial commanders, and march unit commanders. The advance party officer, trail party officer, pacesetter, and escorts assist the convoy commander in controlling the movement.

(1) ***Column, serial, and march unit commanders***. These commanders plan and control the motor movement and enforce march discipline. They may be either officers or noncommissioned officers.

(2) ***Pacesetter***. The pacesetter should be an experienced officer or NCO who rides in the first vehicle of each element in the convoy. The pacesetter maintains or adjusts the rate of march necessary to meet the schedule. In so doing, the pacesetter will direct that the convoy speed up to compensate for lost time due to terrain, weather, traffic conditions, or other obstacles. The pacesetter's job is critical as he must ensure the convoy averages the march rate over the length of the route.

(3) ***Trail officer***. The trail officer is positioned at the rear of the column. He checks and observes vehicles, march units, or serials at the SP. He ensures that approaching traffic from the rear is warned when the column halts. He also picks up guides and markers left by preceding elements of the march column. He investigates accidents on-the-spot, directs evacuation of injured personnel, and effects disposition of disabled equipment.

(4) ***Trail maintenance officer***. A maintenance technician/NCO rides at the rear of the column with maintenance and recovery personnel and equipment and supervises en route maintenance operations. In a small column, the trail officer and the trail maintenance officer may be the same person.

(5) ***Guides***. Guides are used to ensure the convoy follows the prescribed route. Guides become very important when operating in an area where road signs are poor or nonexistent. On controlled routes, the area commander may furnish guides to direct units or vehicles moving over these routes. Highway regulation authorities will use movement regulation teams and military police to assist moving units. Although these teams do not normally escort convoys, they assist convoy commanders in locating supported units, preventing conflict with other convoys, and providing other information on the route. On routes that are not controlled, the moving unit is usually responsible for providing its own guides.

c. **Start Points and Release Points**. All motor moves are scheduled from a start point to a release point. For most moves, when all vehicles originate from the same location, selecting an SP is a simple procedure. However, columns are sometimes composed of vehicles from several different units that may not originate at one location. When this occurs, the convoy commander must select an SP that is common to all units and vehicles on the route. Similarly, not all vehicles may have the same final destination. Yet, there must be a place where elements of the column can be released from column control to continue their assignments. This place is the RP.

(1) ***Start point***. An SP is the place all elements of a column come under the active control of its commander. On passing the SP, each unit should be traveling at the rate of march and vehicle interval (gap) stated in the operation order. If the convoy is moving on a controlled route, the SP will usually be the first checkpoint on the route that the convoy passes. If the convoy is not

moving on a controlled route, the convoy commander will select an SP along the route that is easily recognized on both map and ground.

(2) ***Release point***. The RP is the place where elements of a column are released from the active control of the commander. They leave the column to go to their designated areas. The RP, like the SP, must be on the column's route. If the convoy is moving on a controlled route, the RP will usually be the last checkpoint on the route that the convoy passes. If the convoy is not moving on a controlled route, the RP should be a place along the route easily recognized on both map and ground. The RP is neither the final destination nor a place to stop a convoy. The convoy must clear the RP and get off the route with a minimum of delay to prevent congestion with other scheduled movements. Unit guides may meet their units as they arrive at the RP and lead them to their designated area. Multiple routes and cross-country movements should be used from the RP to allow units to spread rapidly.

If the destination is a customer support location, the convoy commander should use an advance party or other communications to contact the receiving unit before arrival of the main body. This will let the receiving units meet the convoy at the RP and guide the vehicles to where they are needed. It will also facilitate getting the vehicles off the route quickly, so as not to interfere with other scheduled traffic. As the vehicles are unloaded, they should be scattered out, and after-operation maintenance performed. Drivers should be informed as to where and at what time to assemble for the return trip.

d. **Halts**. Halts are made for rest, personal comfort and relief, messing, refueling, maintenance and inspection of equipment, and schedule adjustments. Halts must be incorporated into road movement planning to ensure that the time for the halt is reflected in road movement tables and the movement bid (see Appendix J). Before any convoy, a risk assessment should be accomplished considering such things as time, duration, and cargo to ensure the mission is completed safely.

(1) ***Time, duration, and purpose***. Short halts are made for personal comfort and relief, inspection of equipment, and en route equipment checks. Short halts will normally last 10 to 15 minutes. Longer halts, for messing, refueling, and bivouacking, will last as long as required to accomplish these tasks. When the situation permits, messing and refueling halts should coincide. Convoy commanders must remember that the time taken to get in and out of the rest halt is part of the time allocated for the halt.

(2) ***Halt procedures***. Use the following procedures at halts:

- Plan for halts in areas with good security and fields of fire.
- Avoid halting on curves or grades.
- Never block the road when conducting halts.
- Maintain the prescribed gap to enhance security.
- Keep civilians away from the convoy vehicles.
- Post road guards at the front and rear of the convoy to warn approaching traffic.

(3) ***Location***. Select the locations for scheduled halts in advance. In most areas of operations, the location of rest halt areas on controlled routes will be centrally selected by commanders exercising area control and published in the highway regulation plan. Some types of rest halts, especially those for refueling, maintenance, and messing, may be established by an ASG

(COMMZ), CSG (corps), or DISCOM to support all convoys passing over the route. No matter who plans rest halt locations, they should offer adequate ingress and egress to get all vehicles in and out, offer dispersion and concealment, and be large enough to accommodate all vehicles and rest halt functions.

(4) ***Duties of personnel***. During halts, all personnel have certain responsibilities. Officers and noncommissioned officers check the welfare of their soldiers, the security of loads, and en route maintenance. Control personnel inspect vehicles and loads. They give instructions to ensure that the column will get started with a minimum of confusion. Dining, medical, and maintenance personnel perform such special duties as the purpose and duration of the halt permit. Drivers inspect their vehicles and loads and perform en route maintenance.

e. **Gap and March Rate**. Distance between vehicles (gap) has been mentioned several times in the preceding paragraphs. The commander determines the gap based on the march rate, route, and threat. If the same gap is prescribed for all speeds, then the move will be executed as a fixed column. If the gap between vehicles is regulated to increase or decrease as speeds increase or decrease, the move will be executed by a governed column.

March rate will depend on the condition of the road, the traffic, and the speed of the slowest vehicle. In all cases, the march rate will be less than the legal posted speed limits. Also, various commands specify maximum convoy march rates under various operational conditions. Convoy commanders must be familiar with local command policies.

If a governed column is prescribed, a technique for drivers to determine the correct gap based on speed is the speedometer multiplier. The speedometer multiplier is a specified number (1, 2, or 3) to multiply times speed to determine the correct gap. For example, with a speedometer multiplier of 2, vehicles traveling at 40 kilometers (25 miles) per hour will have a gap of 80 meters (50 yards) between them. The gap will thus vary by speed and the speedometer multiplier. Because the gap changes with speed, drivers must open or close the gap to adjust to changing conditions. The major benefit is safety, to put more distance between vehicles at higher speeds. Even when using the speedometer multiplier, a minimum gap should be set to prevent bunching of vehicles at very low speeds. The governed column method can only be used by a well-trained, thoroughly disciplined unit.

f. **Submission of Movement Bids**. A movement bid is a request for clearance to move on a controlled route, such as an MSR. Movement bids may be required for convoys containing a certain number of vehicles, types of vehicles, or types of loads. Local policy or law determines the requirement to submit a movement bid. In CONUS, DD Form 1265 and DD Form 1266 serve as movement bids. In NATO, STANAG 2154 and STANAG 2155 govern movement bids. A movement credit is an alphanumeric code issued to the moving unit as the approval of the movement bid. In some areas of operation, the moving unit is required to chalk the movement credit on the sides of vehicles. See Appendix M for information on obtaining convoy clearance in CONUS. For information on movement bids in overseas theaters, see FM 55-10.

To complete a movement bid, the convoy commander must calculate the arrive and clear times at the SP, en route CPs, and the RP. The arrive time is the time the first vehicle of the convoy will arrive at an SP, CP, or RP. The clear time is the time the last vehicle of the convoy will clear that SP, CP, or RP. To calculate the arrive and clear times, the convoy commander must understand the various time and distance factors relating to movement. Decisions the convoy commander makes in

organizing the convoy--such as the number of serials and march units, the march rate, and the gaps--will affect the amount of time it takes a convoy to travel over a route. Moving units must carefully plan their movements and submit an accurate movement bid when required. See Appendix J for the necessary formulas.

If the route selected for movement is a supervised or dispatch route, the convoy commander or battalion headquarters should contact the DTO or servicing MC detachment to determine what restrictions and requirements they place on convoys. If a movement bid is required, the convoy commander or battalion staff must complete the bid and submit it in the required time. The DTO or MC detachment commander can also inform the convoy commander of support furnished along the route, such as security, traffic control, maintenance, and fuel. Perhaps most importantly, he can inform the convoy commander about the current threat status along the route.

g. **Communications**. The ability to communicate during convoy operations is essential. Radio nets must be established to link the convoy commander with higher headquarters, air and artillery support, element commanders, any security force commander, gun trucks, medics, and the trail party commander. Within the column, each march element may have its own control net with the march element commander and the head and trail party. Other communications techniques, such as signals, must be established and rehearsed. There are several ways to communicate while on convoy. These include the following:

- *Visual signals*. These may involve arm-and-hand, flashlight, flag, headlight, and pyrotechnic signals. These signals should be specified in an SOP so that drivers are completely familiar with them. Visual signals must be trained and rehearsed.
- *Audio (sound) signals*. These may include the use of whistles, horns, and verbal messages. Aircraft and command and control vehicles may be equipped with loudspeakers to issue instructions.
- *Radio*. This is the best way to communicate during a road march. There are several things to consider about the use of radios:

  - Availability of radios is limited within the convoy. Radios are usually limited to command and control vehicles.
  - The range of radios is limited unless retransmission stations are established.
  - Radio transmissions may not always be allowed under all combat conditions.

Even with newer radios, the volume of radio transmissions and the ability of the enemy to jam may render them unreliable in some circumstances.

h. **Route Reconnaissance**. The decision as to which route to use will depend on routes available under the current highway regulation plan and the ability of routes to support the type of vehicles moving. Often the route will be prescribed by the higher headquarters. In this case, a map reconnaissance will enable the convoy commander and battalion staff to select tentative checkpoints or to confirm those already established. The convoy commander can ascertain critical points and potential ambush sites by contacting the DTO or servicing MC detachment through whose area the convoy will pass. The convoy commander should also conduct either a ground or aerial reconnaissance of the route once the map reconnaissance has been completed. To help them become familiar with the route, subordinate convoy leaders should be included in any reconnaissance. If the reconnaissance shows road or bridge damage, the convoy commander should notify his higher headquarters, which will in turn notify the DTO or MC detachment. The route reconnaissance

should include identification of critical points and check points and the selection of an SP, RP, halt sites, and a bypass or alternate route.

i. **Escort and Security Elements**. Military police units may provide convoy security to a specific convoy or on an area basis. Security of routes is an MP mission. However, the availability of MP support depends on the threat in the area of operations, the sensitivity of the cargo, and other missions the MPs must support. If available, escort and security elements are used to secure and protect the convoy from enemy activity. Convoy escort and security elements are usually the responsibility of the moving unit. However, the MPs may provide them on a mission basis contingent upon the threat and importance of the convoy. Convoy commanders must request MP support through command or movement control channels. If MP support is approved, convoy commanders must closely coordinate with the MP unit directed to provide support. The presence of MPs or other escorts does not relieve the convoy commander from responsibility for the security of his convoy. Convoy commanders must plan and coordinate through their chain of command all matters pertaining to convoy security. These include the following:

- Noise, litter, and light discipline.
- Front, flank, and rear security.
- Security during halts.
- Air cover.
- Fire support.
- Communications security.
- Deception.

A convoy may be provided MP or combat force escorts. In placing escorts, the commander must consider the number of vehicles available, the size of the convoy, terrain and route characteristics, and likely enemy activity. Escorts should be placed to allow maximum protection for the most critical convoy elements. Since it is easier for vehicles to move forward, some escort vehicles must be positioned in the rear of the march element to which they are attached. If only one escort vehicle is provided, it should be placed to the rear of the convoy so it can be brought forward in the event of a tactical emergency.

j. **Convoy Support**. Based on the mission and circumstances of the move, support to convoys may include any of the following: fire support, combat aviation support, messing en route, maintenance en route, refueling en route, and medical support en route.

(1) ***Fire support***. As a rule, convoy commanders do not coordinate fire support. Convoy fire support is planned and coordinated by a fire support element on an area basis (such as a base operations center, base cluster operations center, or rear area operations center). This planning may provide fire support to MSRs or other routes if intelligence indicates that the enemy will likely target convoys at particular locations. Fire support assets will usually be employed only against Level III threats. Convoy commanders should know the fire support plans along their route and know how to call for and adjust fire. For more information, refer to FMs 6-30 and 6-20-30. Convoy commanders must know call signs, frequencies, and other signal operating instructions.

(2) ***Combat aviation support***. Another element of fire support that should be considered is Army attack helicopters. Through coordination, attack helicopters can be on alert status or overhead while the convoy is en route. In either situation, their radio frequencies must be

known to convoy and security radio operators and control personnel (FM 24-18). Steps must also be taken to standardize markings of convoy vehicles to prevent fratricide.

(3) ***Messing en route***. While on convoy, drivers can be fed by their organizational field feeding capabilities or by transient messes. For organizational mess, the convoy commander uses organic capabilities to feed, such as an MKT or MREs. The ASG or CSG may establish transient field feeding sites along the MSRs.

(4) ***Maintenance en route***. En route maintenance is performed by the driver and by mechanics in the trail element when the repairs are beyond the driver's capability. Drivers always perform normal preventive maintenance at halts. Maintenance personnel in the trail element are used to carry out all unit-level repairs on vehicles of the convoy. If the vehicle can be repaired quickly, then attempt the repair. If it cannot be repaired quickly or there is doubt, the vehicle should be towed or recovered and the march continued. Vehicles undergoing repairs or those that are to be abandoned or destroyed will be moved off the road. When a vehicle is disabled during a convoy, the following procedures should be observed:

- Driver pulls disabled vehicle to the right of the road and signal the convoy to pass.
- Assistant driver and any passengers dismount and take up defensive positions.
- Driver tries to repair the vehicle.
- Trail officer notifies the convoy commander of the disabled vehicle and recovers or destroys it depending on the tactical situation.
- Limit recovery vehicle recovery operations to only those situations where a tow bar will not work. Use tow bars when possible.
- Do not obstruct roads during recovery operations.
- Do not destroy equipment unless directed through command channels or as a last resort to prevent enemy capture.

(5) ***Refueling en route***. The requirement for refueling is based on the normal operating range of convoy vehicles. The operating range is the normal distance that a vehicle can travel on a full tank of fuel. Operating range varies according to the terrain, vehicle, and load. A heavily loaded truck operating on poor roads in hilly terrain will get less fuel mileage than a lightly loaded truck operating on good roads in fairly level terrain. In determining when to refuel, use the vehicle with the least operating range. This will prevent any vehicle in the convoy from running out of fuel.

(6) ***Medical support en route***. The convoy commander must consider medical support based on the mission and likelihood of enemy contact. Medical support can be provided by unit personnel trained as combat life savers, by attachment of a medical team to the convoy by higher headquarters, or by the area commander. Normally, MEDEVAC frequencies are established for emergencies in the SOI.

5-5. UNIT SOP. A complete SOP facilitates planning. At company level, SOPs should conform with those prepared by the next higher headquarters. At a minimum, the SOP should cover the following subjects:

- Duties of the convoy commander and other convoy control personnel.
- Convoy organization.
- Weapons and ammunition to be carried.
- Hardening of vehicles.
- Protective equipment to be worn.
- Preparation of convoy vehicles; for example, information on tarpaulins, tailgates, and windshields.
- Counterambush actions.
- Operations security measures.
- Immediate action drills.
- Actions during scheduled halts.
- Maintenance and recovery of disabled vehicles.
- Refueling and rest halts.
- Communications.
- Actions at the release point.
- Reporting.

5-6. PREPARING VEHICLES FOR CONVOY. This paragraph discusses the responsibilities of key personnel, as well as the elements needed, in preparing vehicles for convoy.

a. **Command Responsibilities**. The commander of the moving unit is responsible for the mechanical condition of his vehicles. Leaders must inspect all vehicles according to appropriate TMs before departing for the mission. Convoy commanders should also ensure that--

- Additional fuel, water, and lubricants are provided for en route requirements.
- Loads are inspected.
- Tarpaulin, troop safety straps, and end curtains are provided when required.
- Vehicles are hardened when required.
- Columns are identified with appropriate markings.
- Weapons are inspected.

b. **Marshaling or Assembly Area Inspection Teams**. A technique for large unit movements is to establish marshaling area or assembly area inspection points. As convoys are ready to depart, they proceed to the inspection point for final checks and driver briefings. Unit level maintenance personnel may be available to assist unit leadership in correcting last-minute minor deficiencies. Trucks with major problems will be returned to the parent unit and replaced with serviceable vehicles.

c. **Hardening Vehicles**. Cover the cargo bed of troop-carrying vehicles with at least a double interlocking layer of sandbags. Cover the cab floor of all vehicles with a double layer of sandbags under the driver's seat. Take care not to hamper pedal movement or hamper the driver's access to them. As an additional precaution, place a heavy rubber or fiber mat over the sandbags to reduce danger from fragments such as sharpened stones, sand, and metal parts of the vehicle. This also prolongs the life of sandbags. Sandbags may also be placed on the fuel tank, fenders, and hood. See Appendix O for more information on vehicle hardening.

When contemplating hardening vehicles for escort and/or gun truck duty, use one escort/gun truck for every eight task vehicles. Prior approval from higher headquarters must be received before task vehicles are converted into escort/gun trucks.

d. **Covering Cargo**. The main advantage in covering cargo is that it denies intelligence information while providing protection from weather elements. The disadvantage in installing tarpaulins is that they have to be removed for loading and unloading operations. This increases the time it takes to accomplish a mission.

e. **Convoy Identification**. Each column should be identified by a blue flag on the lead vehicle and a green flag on the rear vehicle. Flags should be mounted on the left of the vehicles, either front or rear. They must be positioned so that they do not interfere with driver vision or functional components of the vehicle. When movement is at night, the lead vehicle shows a blue light and the rear vehicle a green light. The vehicle of the convoy commander and the march unit commanders must display a white and black diagonal flag on the left front bumper. This flag is divided diagonally from the lower left corner to the upper right corner with the upper left triangle white and the lower right triangle black. Trail party vehicles carry an international orange safety flag. State and local police or MP escort vehicles do not display convoy identification flags. See Figure 5-3 (page 5-16) for illustrations of flags and flag placement.

The convoy movement order includes a CCN which identifies the convoy during its entire movement. The CCN is placed on both sides of each vehicle in the convoy and, if possible, on the front and back of each vehicle (see Figure 5-4, page 5-16). It is also placed on the top of the hood of the lead and rear vehicles of each march unit. See Appendix M for detailed information on convoy clearance procedures, to include the assigning of CCNs to both AC and RC convoys. See Appendix P for specifications for convoy warning signs.

f. **Final Preparation.** Final convoy preparation includes organizing the convoy, briefing personnel, and inspecting individual equipment and vehicles. Convoy personnel are usually briefed after the vehicles are lined up. After the convoy commander's briefing, personnel are returned to the control of the march unit commanders who give final instructions. Leaders make final inspections of loads to ensure that they are properly secured and that vehicles are ready to move. See Appendix Q for a sample convoy briefing. Radio operators are instructed to check their equipment and enter the net.

5-7. NIGHT CONVOYS. Although night convoys are extremely vulnerable to ambush and sniper fire, CSS doctrine requires that the preponderance of resupply operations be conducted during hours of darkness. Units must be trained in techniques for night convoys, night loading and off-loading, and night refueling. Heed the following guidelines for night convoys--

- Keep night convoys small.
- Use roads that drivers know.
- Make maximum use of night vision devices.
- Rehearse movements.
- Conduct leader reconnaissance.

Plan night moves in the same manner as daylight moves. However, night moves take longer and there is greater chance for mistakes, injury, and fratricide. When planning a night move, determine if the convoy will operate in an area that requires blackout drive. This decision will be made by the area commander.

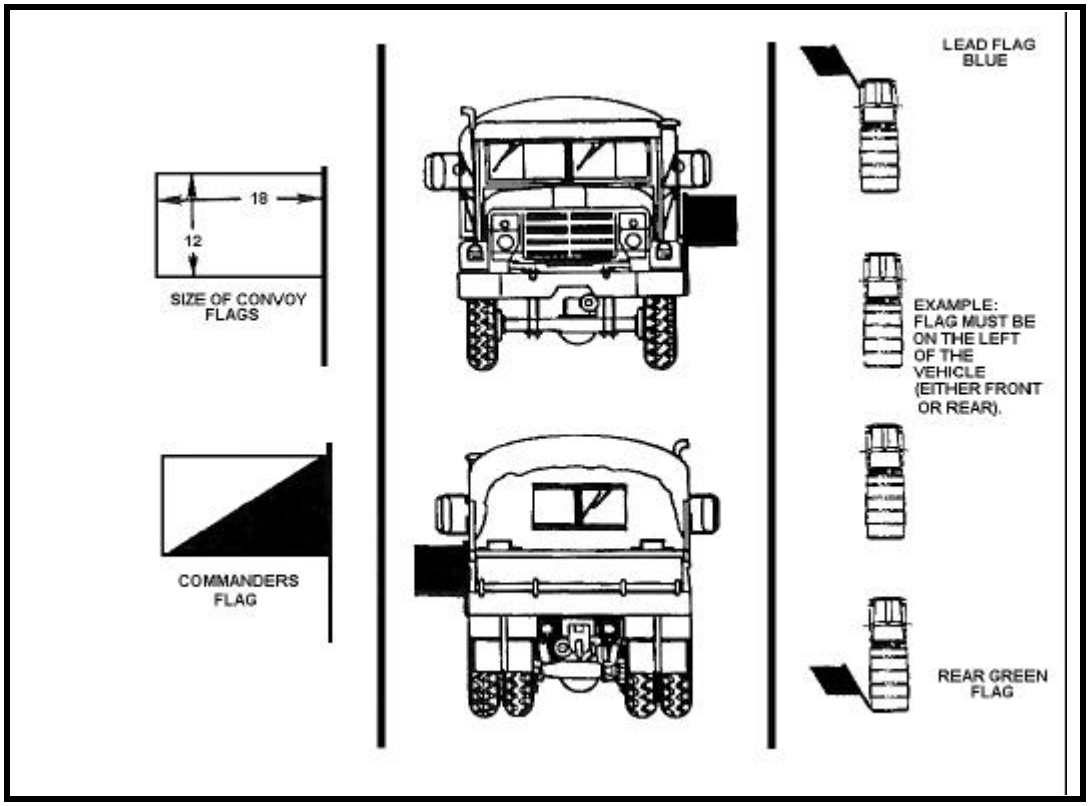

Figure 5-3. Flag placement on a vehicle

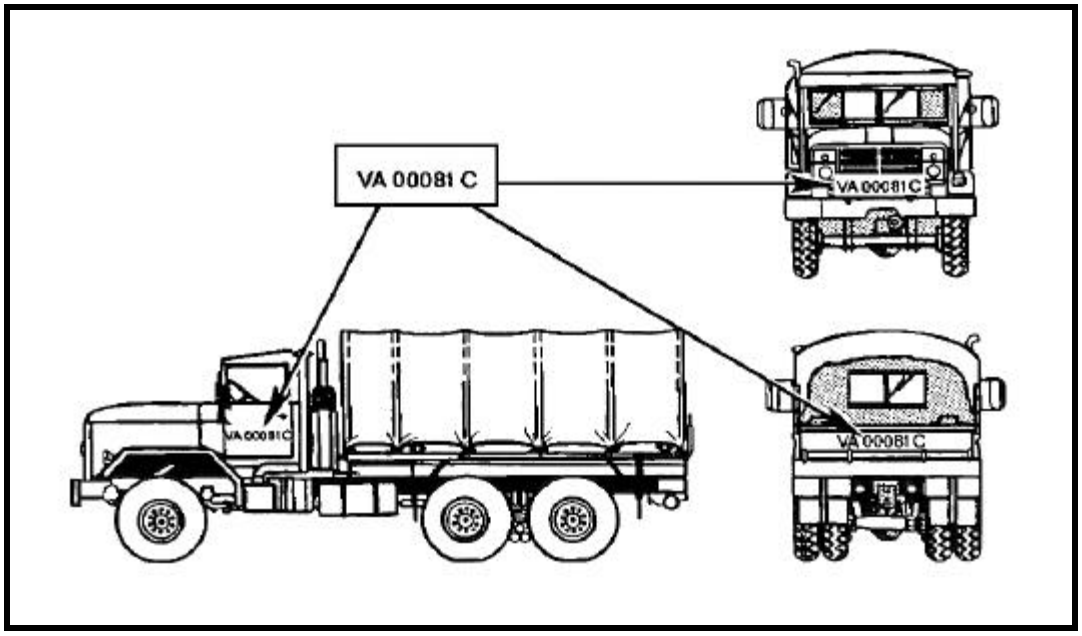

Figure 5-4. Placement of convoy clearance number

5-8. CONVOY COMMANDER'S REPORT. The convoy commander's report provides detailed information on convoy operations. It is a source of operational data that may be used in various reports as well as in planning future operations. Although this report is submitted upon completion of the convoy operation, the nature of the information recorded requires that it be maintained throughout the operation. See Appendix R for a sample report format.

5-9. HIGHWAY CONVOY OPERATIONS. Main convoy routes, such as major highways and expressways, are usually characterized by heavy, fast-moving traffic. Entering, driving, and halting on these routes are extremely critical operations that require prior planning and coordination with civilian authorities.

a. **Entering Convoy Routes**. The convoy should depart the assembly area at the time given in the movement order. Police support will reduce interference with other traffic and ensure the integrity of the convoy. Use the "close column formation" when moving from the assembly area to the main convoy route.

NOTE: Risk can be significantly reduced when civilian police assist by controlling civilian traffic. If a civilian police escort is not available, MPs or other military personnel should provide escort service. However, military escorts have no authority to instruct military drivers to disregard traffic control devices or signs.

Most expressways are equipped with entrance and exit ramps and acceleration and deceleration lanes that are designed to allow vehicles to enter and leave without interfering with other traffic. When used properly, these lanes greatly reduce the risk of traffic accidents and help in the movement of the convoy. The following instructions apply both to the initial point of entry to the expressway and the return to it from a rest halt area:

- As mentioned previously, civilian police assistance should be obtained to direct convoy vehicles onto the expressway and to control civilian traffic. When civilian police are not present, use MP or other military personnel to signal military vehicles when it is safe to enter the expressway. Military traffic should not interfere with civilian traffic.
- Before driving onto the entrance ramp, close up convoy vehicles to a maximum distance of 20 yards. This reduces the time the entrance ramp is blocked to normal traffic (see Figure 5-5, page 5-18). Upon reaching the acceleration lane, increase convoy speed to equal as closely as possible that of other traffic on the expressway. The maximum speed authorized for military vehicles on expressways is 50 MPH. Military vehicles moving on controlled access highways will maintain the posted minimum speed or 40 MPH if a minimum speed is not posted. Vehicles that cannot maintain the posted minimum speed will be routed over an alternate noncontrolled access road (refer to AR 55-162). Do not exceed the minimum speed unless directed by the convoy commander. Under no circumstances will the posted maximum speed limit be exceeded.
- When moving into the traffic lane and before merging, the driver must ensure that lanes are clear of oncoming traffic.
- After entering the traffic lane, drivers should not immediately try to move to the prescribed distance for expressway convoy operations but continue for a distance equal to the road space of the column. Drivers should then gradually attain the distance between vehicles for expressway driving or as given by the operation order and the final briefing.

NOTE: Vehicles must not slow down or close up while in a traffic lane of the expressway.

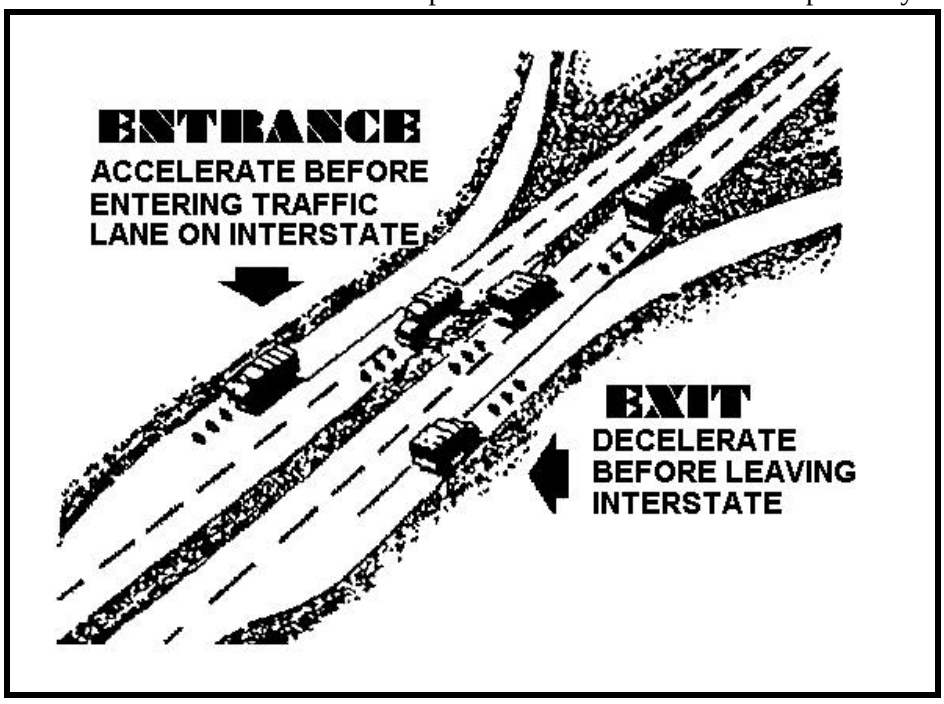

Figure 5-5. Entering and exiting an expressway

b. **Driving on Expressways**. All vehicles must remain in the right lane once the convoy has entered the expressway. Where the right lane is reserved for traffic turning off at the next exit

ramp, the convoy should use the next adjacent lane. Drivers must be alert and prepared to slow down or take other evasive action to avoid vehicles entering the expressway from acceleration lanes.

If a vehicle develops mechanical trouble, the driver should turn on the appropriate turn signal to alert the vehicle behind him and move onto the shoulder of the road or into a parking area and wait for the arrival of the trail party. The remaining convoy vehicles should continue past the halted vehicle, leaving maintenance to be done by the trail party. The following actions will help drivers to avoid drowsiness or "highway hypnosis":

- Keep cab windows open.
- Shift body positions frequently.
- At rest halts, get out of the cab and move about.

CAUTION

Instruct convoy vehicle drivers NOT to give "clearance signals" to civilian vehicle operators. Responsibility for determining safe passing conditions rests with the driver desiring to pass.

c. **Exiting an Expressway**. To exit an expressway, either to enter a rest area or take another route, move vehicles to the deceleration lane at the earliest opportunity. Reduce speed to posted exit speed limit.

d. **Rest and Meal Halts on Conventional Highways**. Schedule rest halts so that the convoy will halt for 15 minutes at the end of the first hour of operation and 10 minutes every 2 hours thereafter. When a suitable area is not available at these periods, minor adjustments may be made to this schedule. On conventional highways with adequate off-shoulder parking space, rest and meal halts normally do not present a problem. However, the following precautions should be taken:

- Do not select rest areas located in urban or heavily populated areas.
- Avoid areas on curves or reverse sides of hills.
- Leave enough room to allow the vehicles to park off the paved portion of the road and return to the road safely.
- Maintain a minimum distance of 3 feet between parked vehicles.
- Place warning kit devices at the head and tail of the column unless the vehicles are completely off the highway and shoulder. Leave the flashing warning lights in operation and the headlights on. Post a guard behind the trail party with proper warning devices to alert, but not direct, approaching traffic.
- Do not permit convoy personnel, with the exception of guards posted at the head and tail of each halted march element, on the traffic side of vehicles except to perform prescribed maintenance.
- Make sure drivers and assistant drivers perform prescribed at-halt maintenance and check the security of cargo. Deficiencies that cannot be corrected by the vehicle crew should be reported to the serial commander.
- Check drivers for illness and fatigue.

- Post guards at least 50 yards behind the last vehicle to warn traffic when departing a rest area. When police support is provided, this step may not be required. Convoy vehicles should return to the highway as rapidly and safely as possible.

e. **Rest and Meal Halts on Expressways**. Information on the location of rest areas and their truck parking capacities on expressways over which the convoy will move is available at each ITO. The designated federal or state rest areas planned for convoy use should be entered in item 20 of DD Form 1265.

Only emergency stopping is authorized on expressways. Official rest areas or parking areas may be used for scheduled halts of military convoys. On most expressways, these areas are located at 25- to 30-mile intervals. Normally, separate parking areas within the rest area are designated for truck and passenger car parking. Convoys should use the portion reserved for trucks. Ensure that there is space for other vehicles. Convoy vehicles should not occupy more than 50 percent of the truck parking space at any time. If the number of trucks in a convoy will exceed 50 percent of the truck parking area, organize the column into serials. Maintain a sufficient time gap between serials to allow one to clear a rest area before the following serial arrives. Or, you may schedule convoy serials into different rest areas; however, this separates serials to such an extent that control is reduced.

Normally, acceleration lanes are provided at rest areas to facilitate merging of vehicles with other traffic. The same procedures are used when departing a rest area as when making an initial entry onto an expressway.

Meal halts on expressways require careful planning because of their longer duration. If the selected rest area cannot accommodate all of the convoy vehicles, one of the following options can be taken:

- Phase the convoy into a rest area in serials with enough time gap to allow the preceding serial to eat and clear before the arrival of the next serial.
- Have all serials halt at about the same time but at different rest areas. However, this will require excessive gaps between elements, thus reducing the commander's control.
- Use the leapfrog method by requiring the first serial to halt at a rest area while the second serial continues on to the next area, usually 25 to 30 miles ahead. By the time the first serial has completed its halt and arrived at the area where the second serial stopped, the second serial should be ready to join the column.
- Leave the expressway and use a previously selected area. This option allows all personnel to take a meal halt at the same time.

f. **Refueling Halts**. The majority of military vehicles can travel 300 miles without refueling. Since this exceeds the distance a convoy normally travels in one day, arrangements for mass refueling before reaching the overnight halt are unnecessary. Vehicles with limited range should be refueled during the noon meal halt as well as during regular refueling halts.

g. **Toll Roads, Bridges, and Tunnels**. A convoy representative should be assigned to clear the convoy at the initial entrance to toll facilities and any intermediate points where tolls are collected. When possible, obtain toll tickets before the convoy departs from its point of origin.

When this is not feasible, the convoy representative should arrive at the toll facility entrance well ahead in advance to purchase tickets and arrange for the uninterrupted movement of the convoy through the toll facility.

h. **Halts Due to Mechanical Failure**. A vehicle disabled because of mechanical failure should immediately be moved from the traffic lane to a location where it will not be a hazard to other traffic. If a breakdown occurs while driving on an expressway or highway, the driver should take immediate action appropriate to the time of day and degree of visibility in the area.

(1) ***Sunset to sunrise***. During the time that lights are required (sunset to sunrise) and when forward visibility is reduced to 500 feet or less, a reflector should be placed either in the obstructed lane or on the shoulder of the road if the vehicle is on or over the shoulder. Place the reflector to face the traffic using that lane. Do this before any attempt is made to repair the vehicle. Reflectors should be placed in the following order:

- One reflector in the center of the lane of traffic occupied by the vehicle and not less than 40 paces (approximately 100 feet) from it in the direction of traffic approaching in that lane (see Figure 5-6). If the vehicle is on or over the shoulder and does not occupy a traffic lane, the warning device should be placed on the edge of the roadway so that the traffic lane is not blocked.
- One reflector on the traffic side of the vehicle, four paces (approximately 10 feet) to its rear facing the traffic in that lane.
- One reflector 40 paces from the vehicle in the opposite direction.
- If the vehicle is stopped within 300 feet of a curve, crest of a hill, or other obstruction to view, the warning device in that direction should be placed so as to give ample warning to other users of the highway. However, the device should be placed not less than 80 paces or more than 120 paces from the vehicle (see Figure 5-7, page 5-22).

(2) ***Sunrise to sunset***. During the time lights are not required (normally sunrise to sunset), place red flags or reflectors with mounted flags at the distances prescribed for night. Since most warning kits contain only two flags, the reflector placed 10 feet behind the vehicle will not have a flag mounted on it. DO NOT use military personnel to warn drivers by manual flagging except where emergency warning devices do not give adequate warning to civilian traffic.

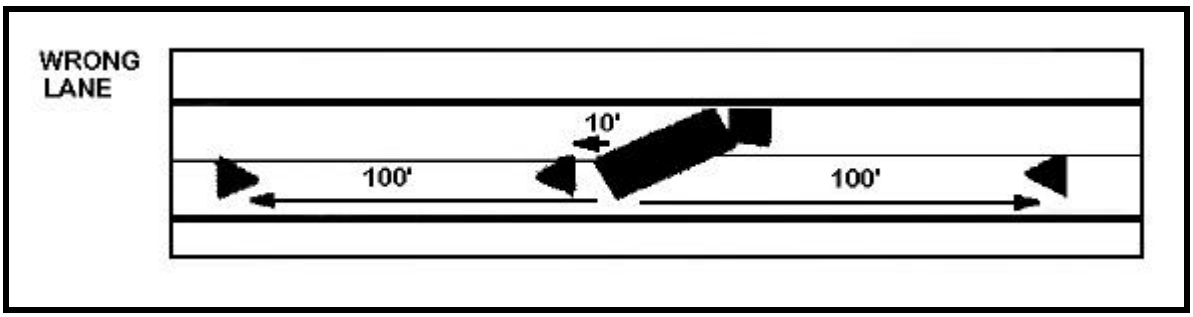

Figure 5-6. Vehicle stopped, blocking two lanes

i. **Accident Procedures**. If an accident occurs, every effort must be made to reduce its effects and to keep the convoy moving. If an accident happens in the convoy, the following steps should be taken:

- *Keep moving*. Only the vehicle immediately behind the vehicle should stop and render assistance.
- *Give first aid*. Give immediate attention to injuries according to FM 21-11.
- *Wait for assistance*. Do not move the damaged vehicle until an accident investigation has been completed by civilian police. Report any accident to civilian police IAW AR 385-40.
- *Clear the traffic lane*. The crew of the affected vehicle should make every effort to clear the traffic lane as soon as possible. In case of injuries, the crew of the assisting vehicle may be required to move the damaged vehicle.
- *Prepare the accident report*. Whenever a military vehicle is involved in ANY accident, the driver will prepare a SF 91.

On-the-spot information will be recorded on the form by the operator involved. If the operator is unable to prepare the report at the scene of the accident, it will be prepared by anyone so directed. The report must be completed and delivered to the operator's immediate supervisor as soon as possible for use in preparing DA Form 285.

Whenever state or local regulations require submission of accident reports to their agency, the report will be submitted first to the appropriate claims officer for review to ensure that the rights of the United States government are not prejudiced by admission of liability.

It is essential that personnel be trained to obtain all vital information at the scene of the accident and to complete all entries on the form. Information will often be unavailable after witnesses have left or vehicles have been removed from the scene of an accident. Each item of the report should be checked to make sure it gives a complete picture of facts leading to the accident and what occurred in the accident. If there is any question as to the validity of information obtained for the report, a notation should be made to this effect.

NOTE: When another driver is involved in the accident, his name should be obtained from his driver's permit.

The first officer or noncommissioned officer to arrive at the scene of the accident will take charge by supervising emergency aid, directing military traffic, warning civilian traffic, and directing placement of warning devices until the trail officer arrives. The trail officer, aided by available medical and maintenance personnel, will supervise and direct care of the injured and disposition of the damaged vehicles. Further assistance needed should be requested from the agencies listed in the convoy operation order.

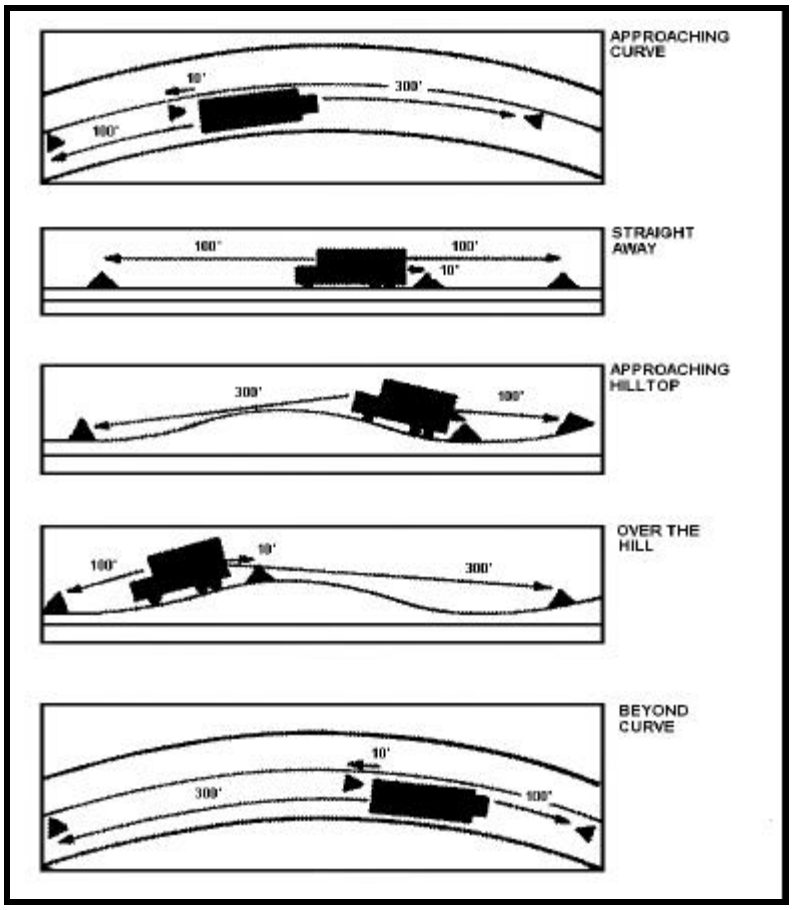

Figure 5-7. Halts under varying conditions due to mechanical failure

j. **Vehicle Accidents Causing a Fire or Creating an Electrical or Fire Hazard**. Motor convoys travel mostly over highways in rural areas. Fire departments in these areas are widely scattered, and firefighters may have to travel a long distance to respond to an emergency. This means that convoy control personnel will probably be the first to arrive at the scene of the accident and must be prepared to rescue endangered personnel, attempt to control the fire, or take steps to prevent a fire. If the accident results in a vehicle fire, convoy supervisory personnel should take the following actions:

- Halt the control vehicle a safe distance from the fire. Direct the driver or other convoy personnel to notify the nearest fire department and police department, using the most expeditious means; for example, roadside emergency, service station, or private residence telephone. If radio communication is available, notify the convoy commander.

- Remove injured personnel from burning vehicles as quickly as possible, even when it means subjecting a person to further injury. Follow established first aid procedures in caring for the injured before attempting to control fire in unoccupied vehicles.
- Keep spectators at a safe distance.
- Attempt to extinguish the fire with the control vehicle extinguisher, extinguishers from other vehicles, or with sand or mud.

In the event of an accident involving a truck carrying either explosives or hazardous cargo, supervisory personnel must take the following actions:

- Approach cautiously. Resist the urge to rush in; people involved in the accident cannot be helped or rescued until the hazards are known.
- Move and keep people away from the scene.
- Use the Emergency Response Guidebook as a guide.
- Immediately notify all assisting agencies and personnel of the hazards involved.

If the accident results in a fire hazard, supervisory personnel should do the following:

- Halt the control vehicle a safe distance from the accident. Direct the driver or other convoy personnel to notify police and fire departments by the fastest means. When radio communication is available, notify the convoy commander.
- Turn off the ignition and lights of the vehicles involved. Because of the possibility of sparks, do not remove battery cables unless absolutely necessary.
- Remove injured personnel as soon as possible.
- Keep spectators away from the area where flammable liquids are spilled or toxic fumes have accumulated.
- Guard against smoking by spectators or cigarettes thrown from passing vehicles. If personnel are available, post guards to warn passing vehicle drivers of a fire hazard.
- Notify nearby residents when spillage may place them in danger.

If the accident involves high-tension power lines, an extremely dangerous situation exists. The danger is even greater when the downed lines are touching a vehicle. Convoy supervisory personnel will take the following steps:

- Contact police immediately and explain the situation. The police will be able to contact power company personnel for emergency assistance more quickly than convoy personnel.
- Keep spectators at least 100 feet from downed wires.
- If wires are touching any of the vehicles involved, direct the occupants to remain in place until power company workers can cut off the electricity and remove the wires.
- In case of serious injury where death may be imminent unless rescue is effected, attempt to remove the wires, assist the injured from the vehicle, render first aid, and obtain medical assistance.

The following procedures are **NOT** routine. Perform the following when the possibility of death may result.

- Remove the wire from the vehicle by looping a completely dry fiber or cotton rope around it and pulling it free.
- Lift the wire from the vehicle using a completely dry-seasoned wooden pole.
- Reduce the risk of electrical shock by standing on a rubber vehicle floor mat, dry wooden planking, or other nonconductive material. Rescue personnel must be aware that the ground in the immediate vicinity of where a hot wire is touching may be charged and should be avoided.

k. **Convoy Commander's En Route Report to Clearance Authority**. During peacetime, administrative convoys will not normally be required to report their movement progress at origin, en route, and destination. If required, the convoy commander will provide an en route report to the next higher headquarters. During mobilization and selected exercises, special instructions included with the approved convoy clearance will direct the convoy commander to report to the appropriate headquarters upon departure, at selected halt locations, and upon arrival. The en route report will outline the position of the convoy. If the convoy requires more than one day, the report should include, as a minimum, the following information--

- Time of arrival at overnight stop.
- Estimated time of arrival at state lines on the following day.
- Complete details and circumstances of any accident or incident.
- Highway clearance number and convoy commander's name.